Listing of the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application.

1. (Currently Amended) A method for reducing atmospheric scintillation in a beam of light transmitted across a free space, the method comprising:

(a) generating a substantially single mode phase incoherent beam of light with a ~~single~~ light emitting diode (LED) so as to produce said phase incoherent beam of light having a narrow spectral range;

(b) collimating the phase incoherent beam of light; and

(c) propagating the phase incoherent collimated beam of light across the free space for long range communications transmission, wherein the single mode phase incoherent beam of light reduces atmospheric scintillation when transmitted across the free space and optimizes energy efficiency of the light transmission.

2. (Canceled)

3. (Original) The method of 1, wherein step (a) further includes:

(a.1) generating the incoherent beam of light with a superluminescent light emitting diode.

4. (Original) The method of 1, wherein step (a) further includes:

(a.1) generating the incoherent beam of light with a fiber-optic coupled light emitting diode.

5. (Original) The method of 1, wherein step (a) further includes:

(a.1) generating the incoherent beam of light with a fiber-optic coupled superluminescent light emitting diode.

6. (Original) The method of 1, wherein step (a) further includes:

(a.1) amplifying the incoherent beam of light with a light amplifier.

7. (Original) The method of 1, wherein step (a) further includes:

(a.1) amplifying the incoherent beam of light with an Erbium Doped Fiber Amplifier.

8. (Original) The method of 1, wherein step (a) further includes:

(a.1) generating the incoherent beam of light with a bandwidth limiting light emitting diode.

9. (Original) The method of 1, wherein step (a) further includes:

(a.1) filtering the incoherent beam of light to generate an incoherent beam of light containing a reduced wavelength spectrum.

10. (Original) The method of 1, wherein step (a) further includes:

(a.1) bandwidth limiting the incoherent beam into a plurality of bandwidth channels.

11. (Original) The method of 1, wherein step (b) further includes:

(b.1) collimating the beam of light with a gradient index lens.

12. (Original) The method of 1, wherein step (b) further includes:

(b.1) collimating the beam of light with one of a conventional optical lens and an optical mirror.

13. (Original) The method of 1, wherein step (c) further includes:

(c.1) focusing the beam of light onto a primary focal plane of a telescope.

14. (Original) The method of 1, wherein step (c) further includes:

(c.1) directing the optical beam towards an optical receiver using active pointing techniques.

15. (Original) The method of 1, wherein step (c) further includes:

(c.1) directing the optical beam towards an optical receiver using static pointing techniques.

16. (Previously Presented) The method of claim 1, further comprising:

(d) externally modulating the single mode phase incoherent beam of light.

17. (Original) The method of 16, wherein step (d) further includes:

(d.1) modulating the beam to encode data upon the beam of light.

18. (Original) The method of 16, wherein step (d) further includes:

(d.1) modulating the beam using an interferometer to toggle the light beam to at least one of on and off.

19. (Original) The method of 16, wherein step (d) further includes:

(d.1) modulating wavelength division multiplexing channels within the beam of light.

20. (Original) The method of claim 1, further comprising:

(e) receiving the incoherent beam from free space.

21. (Original) The method of 20, wherein step (e) further includes:

(e.1) tracking the received beam of light using active pointing and tracking techniques.

22. (Original) The method of 21, wherein step (e) further includes:

(e.1) detecting at least one of light and darkness within the received beam of light, thereby producing a received data stream.

23. (Original) The method of claim 22, wherein step (e.1) further includes:

(e.1.1) demodulating the received data stream.

24. (Currently Amended) An apparatus for transmitting a beam of light across a free space in a manner that reduces atmospheric scintillation in the transmitted beam of light, comprising:

a ~~single~~ light emitting diode (LED) to generate a substantially single mode phase incoherent beam of light <u>having a narrow spectral range</u>;

a collimating optics to collimate the beam of light; and

a propagating optics to propagate the phase incoherent collimated beam of light across the free space, wherein the single mode incoherent beam of light reduces atmospheric scintillation when transmitted across the free space.

25. (Previously Presented) The apparatus of 24, wherein the light emitting diode (LED) is a superluminescent light emitting diode.

26. (Previously Presented) The apparatus of 24, wherein the light emitting diode (LED) is a fiber-optic coupled light emitting diode.

27. (Previously Presented) The apparatus of 24, wherein the light emitting diode (LED) is a fiber-optic coupled superluminescent light emitting diode.

28. (Original) The apparatus of 24, further comprising:

a light amplifier to amplify the incoherent beam of light.

29. (Original) The apparatus of 28, wherein the light amplifier is an Erbium Doped Fiber Amplifier.

30. (Previously Presented) The apparatus of 24, wherein the light emitting diode is a bandwidth limiting light emitting diode.

31. (Previously Presented) The apparatus of 24, wherein the light emitting diode further includes:

a filter to bandwidth limit the generated incoherent beam

32. (Original) The apparatus of 24, wherein the collimating optics is a gradient index lens.

33. (Original) The apparatus of 24, wherein the collimating optics is one of a conventional optical lens and an optical mirror.

34. (Original) The apparatus of 24, wherein the propagating optics is a telescope.

35. (Original) The apparatus of 24, wherein the propagating optics further includes:

an active pointing and tracking module to control the direction in which the incoherent beam is propagated.

36. (Original) The apparatus of 24, wherein the propagating optics further includes:

a static pointing module to control the direction in which incoherent beam is propagated.

37. (Previously Presented) The apparatus of claim 24, further comprising:

an external modulator to modulate the phase incoherent beam of light.

38. (Original) The apparatus of 37, wherein the modulator further includes:
an encoding module to encode data upon the beam of light.

39. (Original) The apparatus of 37, wherein the modulator is an interferometer to toggle the light beam to at least one of on and off.

40. (Original) The apparatus of 37, wherein the modulator further includes:
a wavelength division multiplexing module to modulate wavelength division multiplexing channels within the beam of light.

41-43. (Canceled)

44. (Currently Amended) A transmitter for use in an optical light beam data link capable of transmitting a beam of light across a free space in a manner that reduces atmospheric scintillation in the transmitted beam of light for long range communications transmission, comprising:

a ~~single~~ light emitting diode (LED) to generate a substantially single mode phase incoherent beam of light having a narrow spectral range that reduces atmospheric scintillation when transmitted across the free space;

an external modulator to encode data upon the phase incoherent beam of light; and

a collimating optics to collimate the incoherent beam of light;

wherein the ~~single~~ light emitting diode (LED) is a fiber-optic coupled superluminescent light emitting diode.

45. (Original) The apparatus of claim 44, further comprising:

a propagating optics to propagate the phase incoherent collimated beam of light across the free space.

46. (Original) The apparatus of claim 44, further comprising:

a pointing module to point the transmitted beam of light using active pointing and tracking techniques in the direction of an intended receiver.

47. (Currently Amended) A method for optical communication across a free space, comprising:

(a) generating a substantially singe mode phase incoherent beam of light having a narrow spectral range with a ~~single~~ superluminescent light emitting diode;

(b) collimating the beam of light;

(c) externally modulating the beam of light with data to be transmitted from source to a destination across the free space, wherein the source and the destination are separated by a distance of at least one kilometer; and

(d) propagating the modulated beam of light across the free space from the source to the destination, wherein the single mode phase incoherent beam of light reduces atmospheric scintillation in the free space and optimizes energy efficiency of the light transmission.

48. (New) The method of claim 1, wherein said (a) generating comprises generating said phase incoherent beam of light having a spectral range of approximately 40nm or less.

49. (New) The apparatus of claim 24, wherein said LED generates said phase incoherent beam of light having a spectral range of approximately 40 nm or less.

50. (New) The transmitter of claim 44, wherein said LED generates said phase incoherent beam of light having a spectral range of approximately 40 nm or less.

51. (New) The method of claim 47, wherein said (a) generating comprises generating said phase incoherent beam of light having a spectral range of approximately 40 nm or less.

52. (New) A method for optical communication across a free space, comprising:

(a) generating a substantially singe mode phase incoherent beam of light having a spectral range of 40 nm or less;

(b) collimating the beam of light;

(c) externally modulating the beam of light with data to be transmitted from source to a destination across the free space, wherein the source and the destination are separated by a distance of at least one kilometer; and

(d) propagating the modulated beam of light across the free space from the source to the destination, wherein the single mode phase incoherent beam of light reduces atmospheric scintillation in the free space and optimizes energy efficiency of the light transmission.